

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1. (Withdrawn) A manufacturing method of a wet-type segmented friction material that has a core metal of a flat ring shape and a friction material substrate cut into a segment shape along the flat ring shape of the core metal, comprising the steps of:

processing an area around a cut portion corresponding to the segment shape of the friction material substrate with a heat press compression forming;

cutting the cut portion of the friction material substrate into the segment shape after said processing step, thereby preparing segment pieces each having the segment shape; and

joining by adhesion the segment pieces on one or both surfaces of the core metal along the flat ring shape.

2. (Withdrawn) A manufacturing method of a wet-type segmented friction material according to the claim 1, in which the processing step with the heat press compression forming is carried out on only two sides as two straight lines of the cut portion of the segment shape of the friction material substrate.

3. (Withdrawn) A manufacturing method of a wet-type segmented friction material according to the claim 1, in which the processing step with the heat press compression forming is carried out on all four sides of the cut portion of the segment shape of the friction material substrate.

4. (Withdrawn) A manufacturing method of a wet-type segmented friction material according to claim 1, in which the processing step with the heat press compression forming is carried out under a heating temperature of about 100 °C to about 350 °C.

5. (Withdrawn) A manufacturing method of a wet-type segmented friction material according to claim 1, in which the processing step with the heat press compression forming is carried out so that a thickness of the friction material substrate after the heat press compression forming becomes within a range of about 20% to about 95% of a thickness of the friction material substrate in the wet-type segmented friction material as a finished product.

6. (Withdrawn) A manufacturing method of a wet-type segmented friction material according to claim 1, in which the processing step with the heat press compression forming is carried out so that a thickness of the friction material substrate after the heat press compression forming becomes substantially the same thickness of the friction material substrate in the wet-type segmented friction material as a finished product.

7. (Withdrawn) A manufacturing method of a wet-type segmented friction material according to claim 1, in which the processing step with the heat press compression forming is carried out so that a width of a compression portion of the friction material substrate after the heat press compression forming becomes about 0.1mm to about 2.0mm when the friction material substrate is cut into the segment shape.

8. (Currently Amended) A wet-type segmented friction material comprising:

a core metal of a flat ring shape; and

a friction material substrate cut into a segment shape along the flat ring shape of the core metal, thereby preparing segment pieces each having the segment shape, the segment pieces being joined by adhesion on one or both surfaces of the core metal along the flat ring shape, an area around a cut portion corresponding to the segment shape of the friction material substrate being pressed and heat-compressed at two opposite end parts as two straight lines of the cut portion when the friction material substrate is cut into the segment shape before being joined on the core metal, so that the area around the cut portion of each of the segment pieces defines a heat-compressed portion wherein components thereof are joined with each other by heating and compressing,

each of said pressed and heat-compressed areas formed at the two opposite end parts of the friction material substrate being formed into a band-shaped depressed flat area extending along a side edge of an unpressed area defined between said two pressed and heat-compressed areas of the friction material substrate with an even thickness in its entirety that is smaller than a thickness of said unpressed area, each of said pressed and heat-compressed areas having a material density higher than a material density of the unpressed area.

9. (Previously Presented) A wet-type segmented friction material comprising:

a core metal of a flat ring shape; and

a friction material substrate cut into a segment shape along the flat ring shape of the core metal, thereby preparing segment pieces each having the segment shape, the segment pieces being joined by adhesion on one or both surfaces of the core metal along the flat ring shape, a gap as an oil groove being formed between adjacent segment pieces joined on the surface of the core metal, a width at an outer peripheral opening of the gap being larger than a width at an inner peripheral opening of the gap;

wherein each of the segment pieces has substantially a reversed trapezoidal shape with four corners rounded or chamfered so that the oil groove is composed of an inner part, a center part and an outer part aligned in a radial direction of the core metal, the center part being defined between adjacent straight side lines of the adjacent segment pieces while the straight side lines extend parallel to each other, the inner part being defined between adjacent inner rounded or chamfered corners of the adjacent segment pieces so as to constitute the inner peripheral opening of the gap and the outer part being defined between adjacent outer rounded or chamfered corners of the adjacent segment pieces so as to constitute the outer peripheral opening of the gap.

10. (Original) A wet-type segmented friction material according to claim 9, in which the width at the outer peripheral opening of the gap is about one and a half times as large as the width at the inner peripheral opening of the gap.

11. (Original) A wet-type segmented friction material according to claim 9, in which the width at the outer peripheral opening of the gap is about twice to about three times as large as the width at the inner peripheral opening of the gap.

12. (Original) A wet-type segmented friction material according to claim 9, in which the segment piece has a round shape formed at each of the four corners.

13. (Original) A wet-type segmented friction material according to claim 9, in which the segment piece has a chamfered shape formed at each of the four corners.

14. (Cancelled)

15. (Currently Amended) A wet-type segmented friction material comprising:

a core metal of a flat ring shape; and

a friction material substrate cut into a segment shape along the flat ring shape of the core metal, thereby preparing segment pieces each having the segment shape, the segment pieces being joined by adhesion on one or both surfaces of the core metal along the flat ring shape,

wherein two opposite end parts of said friction material substrate are pressed at two sides of two parallel lines defining a separation between a pressed and an unpressed area,

each of said two pressed areas provided on said two opposite end parts of the friction material substrate being formed into a band-shaped depressed flat area extending along a side

edge of said unpressed area defined between said two pressed areas of the friction material substrate with an even thickness in its entirety that is smaller than a thickness of said unpressed area, each of said pressed areas having a material density higher than a material density of the unpressed area.

16. (Currently Amended) A wet-type segmented friction material comprising:

a core metal of a flat ring shape; and

a friction material substrate cut into a segment shape along the flat ring shape of the core metal, thereby preparing segment pieces each having the segment shape, the segment pieces being joined by adhesion on one or both surfaces of the core metal along the flat ring shape,

wherein all four peripheral edges of said friction material substrate cut into the segment shape are pressed,

each of said four pressed areas provided on said four peripheral edges of the friction material substrate being formed into a band-shaped depressed flat area extending along a side edge or a peripheral edge of said unpressed area defined between said four pressed areas of the friction material substrate with an even thickness in its entirety that is smaller than a thickness of said unpressed area, each of said pressed areas having a material density higher than a material density of the unpressed area.

17. (Previously Presented) A wet-type segmented friction material comprising:

a core metal of a flat ring shape; and

a friction material substrate cut into a segment shape along the flat ring shape of the core metal, thereby preparing segment pieces each having the segment shape, the segment pieces being joined by adhesion on one or both surfaces of the core metal along the flat ring shape, a gap as an oil groove being formed between adjacent segment pieces joined on the surface of the core metal, a width at an outer peripheral opening of the gap being larger than a width at an inner peripheral opening of the gap;

wherein each of the segment pieces is of a shape having a pair of curved opposite sides extending in a circumferential direction of the core metal and a pair of parallel linear opposite sides extending in a radial direction of the core metal, the segment pieces are arranged at an interval of the gap while disposing the curved opposite sides along the circumferential direction of the core metal and the linear opposite sides along the radial direction of the core metal so that the oil groove has a V-shape aligned in the radial direction of the core metal.